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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,248	02/06/2002	David S. Soane	AVNT-038D2	8448

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/068,248	Applicant(s) SOANE ET AL.	
	Examiner Victor S Chang	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 and 27-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-23 and 27-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0410</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 20-23 and 27-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 20 and 22, at line 2 and 3 respectively, the phrase "a continuous series of one or more internal gaseous voids" is vague and indefinite, i.e., it is structurally unclear. For the purpose of this Office action, it is presumed that the aforementioned phrase relates to either a single continuous void (i.e., an un-foamed hollow fiber) or a foamed structure of multiple voids (i.e., a foamed hollow fiber).

Similarly, in claims 21 and 23, lines 3-4 in each claim, the phrase "a continuous series of one or more pockets of blowing agent" is vague and indefinite, i.e., it is structurally unclear.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 22, 28, 29, 37 and 38 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 03051352A (Derwent Abstract).

JP '352 is directed to a fibrous board, and teaches that the fibrous board is composed of a hollow fiber of synthetic or semi-synthetic polymers, such as polyester, polyamide, polyethylene, polypropylene, rayon etc., and to which heat-fusing fibers, such as polyester/copolymer of polyester, polypropylene/polyethylene, nylon-66/nylon-6 etc., can be added to form the fibrous board (Abstract). Although JP '352 does not expressly state that the polymer shell is partially radially oriented, it is believed that some degree of molecular orientation in the radial direction is inherent to a hollow fiber, i.e., during the hollow core expansion process, it inherently stretches and orients the polymer chain radially.

Claims lack novelty.

6. Claims 21, 23, 33-35 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03051352A (Derwent Abstract) in view of JP 08-061410 (machine translation in English).

The teachings of JP '352 are again relied upon as set forth above.

For claims 21 and 23, although JP '352 lacks an express teaching of incorporating blowing agents in the fibers, it is noted that JP '410 is directed to a fiber cushion molding formed of foamed fibers. JP '410 teaches that expandable fibers are formed by extruding a mixture of thermoplastic resin, a foaming agent and/or a crosslinking agent. Then the cushion is formed by expanding the fibers in a mold (JP '410, claim 5). As such, it would have been obvious to one of ordinary skill in the art to modify the hollow fiber of JP '352 with blowing agents, as taught by JP '410, motivated by the desire to obtain improved air permeability and cushioning properties.

For claims 33-35 and 42-44, JP '410 teaches in Examples 1-4 that various amide solid blowing agents with suitable decompositions from 142-198C can be used ([0027] and [0031]). Although JP '410 does not expressly teaches the shapes of the blowing agent and a liquid blowing agent, it is believed that, in the absence of unexpected results, the shapes of the solid blowing agent is either inherently disclosed or and obvious optimization to one skilled in the art, motivated by the desire to obtain a uniform distribution of the blowing agent in the resin. Finally, it is believed that the use of alternative blowing agents for thermoplastic resins is also old and well known, note also as evidence the state of the art Crowley (US 3847719) which is directed to a carpet with expandable fibers, and Crowley teaches that a wide variety of blowing agents may be employed including those blowing agents which decompose in the application of heat to give an inert gas, such as nitrogen, hydrogen or carbon dioxide and the like, or may

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also include those liquid blowing agents, such as the fluorocarbons which on the application of heat vaporize to form a cellular product (column 4, lines 55-65).

7. Claims 27, 30-32, 36 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03051352A (Derwent Abstract) in view of Pelosi (US 5596080).

The teachings of JP '352 are again relied upon as set forth above.

For claims 27, 30-32, 36 and 39-41, JP '352 lacks an express teaching that the hollow fiber comprises a crosslinked biopolymer such as a crosslinked zein fiber. However, it is noted that Pelosi's invention is directed to a process for making crosslinked zein, and Pelosi teaches that it is known art to crosslink zein and to form zein fibers (column 1, lines 16-30). As such, it would have been obvious to one of ordinary skill in the art to modify JP '352 with crosslinked zein fiber, motivated by the desire to form durable cushions which are nontoxic and nonpolluting (column 2, lines 32-33).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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VSC

DANIEL ZIRKER
PRIMARY EXAMINER
GROUP ~~1300~~

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Daniel Zinker